

**REMARKS**

In response to the objection to claim 2 as not further limiting the subject matter of claim 1 from which it depends, claim 2 has been amended to delete “or silicone”. Withdrawal of the objection is respectfully requested.

In response to the objection to claim 1 due to informalities regarding the use of parenthesis, claims 1 and 7 have been amended to remove the parenthesis as requested.

Claims 1-6 were rejected under 35 U.S.C. § 112, second paragraph. The Examiner considered the expression defining the fluorine-containing compound to be indefinite.

In response, claims 1 and 7 have been amended as suggested by the Examiner, namely, to recite... **or** fluorine-containing organic phosphate ester compound.

It is respectfully submitted that the claims as amended fully comply with 35 U.S.C. § 112, and withdrawal of the foregoing objections and rejection is respectfully requested.

Review and reconsideration on the merits are requested.

Claims 1-6 were rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 2002-023356 to Ishida. Claims 1-6 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ishida in view of either JP 2001-284289 to Ishida et al. (JP ‘289) or JP 2001-284274 to Furusawa et al. Claims 1-6 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ishida in view of EP 1041652 to Katz et al. (EP ‘652). Claims 1-6 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ishida in view of EP ‘652 and either JP ‘289 or Furusawa et al.

Each of the rejections relies on Ishida (JP 2002-023356) as a primary reference.

The Examiner acknowledged that Ishida ‘356 only teaches trifluoropropyl trimethoxysilane and not a perfluorinated compound, but maintained the rejection for the reason that it would have been obvious to perfluorinate the propyl trimethoxysilane compound of Ishida.

The Examiner believes that the result of making this modification would have been predictable because a perfluorinated compound would be more non-polar and more lipophilic than the trifluoro compound. Motivation for making the modification, according to the Examiner, is found in that it would more precisely allow the conductive material to go to the 2<sup>nd</sup> thin film.

The Examiner also cited Ishida '289 and Furusawa et al. as teaching that one may use siloxanes with a perfluorinated isopropyl "R" group on a siloxane.

Applicants traverse, and respectfully request the Examiner to reconsider in view of the executed Declaration under 37 C.F.R. § 1.132 of Masamichi Morita submitted herewith and the following remarks.

The present invention is directed to an anisotropic material comprising an alternating-line pattern and a layer of at least one functional compound, wherein one type of lines in the alternating-line pattern of the surface comprises a specific fluorine-containing compound as defined in claim 1. Namely, the fluorine-containing compound is at least one fluorine-containing organic silane compound, fluorine-containing organic thiol compound, fluorine-containing organic disulfide compound or fluorine-containing organic phosphate ester compound selected from the group consisting of compound (a) to (f).

As reported in the Declaration under 37 C.F.R. § 1.132 submitted herewith, monomolecular films of a photo-containing compound were formed using various fluorine-containing compounds. Then, the dynamic wet characteristics (i.e., receding contact angles) were measured, the results of which are set forth in Table 1 of the Declaration.

Specifically, Table 1 shows results obtained using the fluorine-containing compounds (a), (b), (c), (d), (e) and (f) as claimed in claim 1, and comparative compounds (Comparison A, Comparison B, and Comparison C).

Comparison A uses a compound having a linear chain  $C_4$  perfluoroalkyl group and a silane group  $(CF_3(CF_2)_3-CH_2CH_2-SiCl_3)$ , that is, nonafluorotetrahydrohexyl trichlorosilane).

Comparison B uses a compound having a linear chain  $C_6$  perfluoroalkyl group and a silane group  $(CF_3(CF_2)_5-CH_2CH_2-Si(OCH_3)_3)$ , that is, tridecafluorotetrahydrooctyl trimethoxysilane).

Comparison C uses a compound having a linear chain  $C_8$  perfluoroalkyl group and a silane group  $(CF_3(CF_2)_7-CH_2CH_2-Si(OCH_3)_3)$ , that is, heptadecafluorotetrahydrodecyl trimethoxysilane).

The correspondence between Comparison A, B and C, all outside the scope of the present claims, and the cited prior art is shown as follows.

Paragraph [0017] of Ishida (JP 2002-023356), paragraph [0014] of Ishida (JP 2001-284289) and paragraph [0019] of Furusawa (JP 2001-284274) describe “fluoroalkylsilane such as heptadecafluorotetrahydrodecyl triethoxysilane, heptadecafluorotetrahydrodecyl trichlorosilane, tridecafluorotetrahydrooctyl trichlorosilane and trifluoropropyl trimethoxysilane”. Katz (EP 1041652), at page 5, line 13, discloses  $C_8F_{17}C_2H_4Si(OEt)_3$ .

Heptadecafluorotetrahydrodecyl triethoxysilane and heptadecafluorotetrahydrodecyl trichlorosilane disclosed in Ishida ‘356, Ishida ‘289 and Furusawa ‘274, and  $C_8F_{17}C_2H_4Si(OEt)_3$  disclosed in Katz ‘652 have a linear chain perfluoroalkyl group of the formula:  $CF_3(CF_2)_7-$  which corresponds to Comparison C. Also, “tridecafluorotetrahydrooctyl trichlorosilane” has a linear chain perfluoroalkyl group of the formula:  $CF_3(CF_2)_5-$  which corresponds to Comparison B. A Cl atom, a methoxy group and an ethoxy group in the silane group each has approximately similar reactivity.

That is, Table 1 shows that the compounds described in paragraph [0014] of Ishida (JP 2002-023356), paragraph [0014] of Ishida (JP 2001-284289) and paragraph [0019] of Furusawa (JP 2001-284274), and page 5, line 13 of Katz (EP 1041652) are equivalent to those of Comparison B and Comparison C of Table 1.

Importantly, Table 1 shows that the fluorine-containing compounds (a) - (f) of the present invention have a larger receding contact angle to n-hexadecane and xylene in comparison with Comparisons A-C. That is, Table 1 demonstrates the fluorine-containing compounds (a) - (f) of the present invention have superior dynamic wet characteristics as compared to Comparisons A, B and C where Comparisons B and C correspond to specific compounds disclosed by each of Ishida '356, Ishida '289, Furusawa and Katz as discussed above.

That is, Table 1 demonstrates that the present invention shows significantly advantageous effects in comparison with Ishida (JP 2002-023356), Ishida (JP 2001-284289), Furusawa (JP 2001-284274) and Katz (EP 1041652). The above-noted results are unexpectedly superior over the prior art cited by the Examiner.

For the above reasons, it is respectfully submitted that claims 1-6 are patentable over the cited prior art, and withdrawal of the foregoing rejections under 35 U.S.C. § 103(a) is respectfully requested.

Withdrawn claim 7 directed to a method for producing an anisotropic material has been amended to include all of the limitations of amended product claim 1. If claim 1 is found to be allowable, Applicants respectfully request rejoinder of withdrawn method claims 7 and 8 pursuant to MPEP § 821.04.

Withdrawal of all rejections and allowance of claims 1-9 is earnestly solicited.

In the event that the Examiner believes that it may be helpful to advance the prosecution of this application, the Examiner is invited to contact the undersigned at the local Washington, D.C. telephone number indicated below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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